

## **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the above-identified application.

## **Listing of Claims**

1. **(Previously Presented)** A method of communicating a data stream through a telecommunications system comprising:
  - receiving said data stream at a communications interface of said telecommunications system, wherein said data stream comprises a first plurality of words;
  - rearranging said data stream into a second plurality of words, wherein said second plurality of words include a relock word, and said relock word is configured to allow said telecommunications system to synchronize with said data stream; and
  - for each of said second plurality of words, determining if said each of said second plurality of words should be included in the generation of a backplane parity value by determining if said each of said second plurality of words is said relock word.
2. **(Previously Presented)** The method of claim 1, further comprising:
  - for said each of said second plurality of words,
  - ignoring said each of said second plurality of words, if said each of said second plurality of words is said relock word, and
  - including said each of said second plurality of words in said parity calculation, otherwise.
3. **(Previously Presented)** The method of claim 2, wherein said parity calculation comprises:
  - calculating said backplane parity value by performing a bit-wise exclusive-or between said each of said second plurality of words included in said parity

calculation, wherein said each of said second plurality of words included in said parity calculation is a byte.

4. **(Previously Presented)** The method of claim 2, wherein said first plurality of words is organized as a first frame having a first frame format and said second plurality of words is organized as a second frame having a second frame format.

5. **(Previously Presented)** The method of claim 4, wherein said relock word is among a plurality of such relock words and said second frame includes said plurality of such relock words.

6. **(Previously Presented)** The method of claim 2, wherein said telecommunications system includes a switching matrix coupled to said communications interface, and said switching matrix switches during a period of time during which said relock word traverses said switching matrix.

7. **(Previously Presented)** A method of transmitting information through a switching matrix comprising:

receiving information, wherein

said information is in a transmission unit,

said transmission unit is divided into a plurality of words, and

said words are arranged in a first format;

rearranging a plurality of said words into a second format wherein

said second format includes a relock word,

said relock word is configured to allow said switching matrix to

synchronize with said transmission unit; and

generating a backplane parity value from at least one of said plurality of said

words, said generating comprising

for each of said plurality of words, determining if said each of said

plurality of words should be used to generate said backplane parity

value by determining if said each of said plurality of words is said relock word.

8.     **(Original)** The method of claim 7, wherein said information is received as an optical signal.
9.     **(Original)** The method of claim 7, wherein said transmission unit is a frame.
10.    **(Original)** The method of claim 9, wherein said frame is a SONET frame.
11.    **(Original)** The method of claim 9, wherein said rearranging rearranges said transmission unit into a backplane frame.
12.    **(Original)** The method of claim 7, wherein said parity value is a backplane parity byte.
13.    **(Original)** The method of claim 12, wherein  
each one of said words is a byte, and  
said generating comprises calculating said backplane parity value by performing a  
bit-wise exclusive-or between said words.
14.    **(Original)** The method of claim 7, wherein said second format allows said switching matrix to be switched errorlessly.
15.    **(Canceled)**
16.    **(Canceled)**
17.    **(Currently Amended)** The method of claim ~~7-15~~, wherein said switching matrix is switched during a period of time during which said relock word is traversing said switching matrix.

18. **(Previously Presented)** A computer program product encoded in computer readable media for communicating a data stream through a telecommunications system, said computer program product comprising:

- a first set of instructions, executable on a computer system, configured to cause a communications interface of said telecommunications system to receive said data stream, wherein said data stream comprises a first plurality of words;
- a second set of instructions, executable on said computer system, configured to rearrange said data stream into a second plurality of words, wherein said second plurality of words include a relock word, and said relock word is configured to allow said telecommunications system to synchronize with said data stream; and
- a third set of instructions, executable on said computer system, configured to, for each of said second plurality of words, determine if said each of said second plurality of words should be included in the generation of a backplane parity value by determining if said each of said second plurality of words is said relock word.

19. **(Previously Presented)** The computer program product of claim 18, said computer program product further comprising:

- a fourth set of instructions, executable on a computer system, configured to, for said each of said second plurality of words, ignore said each of said second plurality of words, if said each of said second plurality of words is said relock word, and include said each of said second plurality of words in said parity calculation, otherwise.

20. **(Previously Presented)** The computer program product of claim 19, wherein said parity calculation comprises:

- calculating said backplane parity value by performing a bit-wise exclusive-or between said each of said second plurality of words included in said parity

calculation, wherein said each of said second plurality of words included in said parity calculation is a byte.

21. **(Previously Presented)** The computer program product of claim 19, wherein said first plurality of words is organized as a first frame having a first frame format and said second plurality of words is organized as a second frame having a second frame format.

22. **(Previously Presented)** The computer program product of claim 21, wherein said relock word is among a plurality of such relock words and said second frame includes said plurality of such relock words.

23. **(Previously Presented)** The computer program product of claim 19, wherein  
said telecommunications system includes a switching matrix coupled to said communications interface, and  
said switching matrix switches during a period of time during which said relock word traverses said switching matrix.

24. **(Previously Presented)** A telecommunications system comprising:  
a processor;  
a communications interface, coupled to said processor;  
computer readable medium coupled to said processor; and  
computer code, encoded in said computer readable medium, configured to cause a data stream to be communicated through said telecommunications system by virtue of being configured to cause said processor to:  
receive said datastream at said communications interface, wherein said data stream comprises a first plurality of words;  
rearrange said data stream into a second plurality of words, wherein said second plurality of words include a relock word, and  
said relock word is configured to allow said telecommunications system to synchronize with said data stream; and

for each of said second plurality of words, determine if said each of said second plurality of words should be included in the generation of a backplane parity value by determining if said each of said second plurality of words is said relock word.

25. **(Previously Presented)** The telecommunications system of claim 24, said computer code further configured to cause said processor to:

for said each of said second plurality of words,  
ignore said each of said second plurality of words, if said each of said second plurality of words is said relock word, and  
include said each of said second plurality of words in said parity calculation, otherwise.

26. **(Previously Presented)** The telecommunications system of claim 25, wherein said parity calculation comprises:

calculating said backplane parity value by performing a bit-wise exclusive-or between said each of said second plurality of words included in said parity calculation, wherein said each of said second plurality of words included in said parity calculation is a byte.

27. **(Previously Presented)** The telecommunications system of claim 25, wherein said first plurality of words is organized as a first frame having a first frame format and said second plurality of words is organized as a second frame having a second frame format.

28. **(Previously Presented)** The telecommunications system of claim 27, wherein said relock word is among a plurality of such relock words and said second frame includes said plurality of such relock words.

29. **(Previously Presented)** The telecommunications system of claim 25, further comprising:

a switching matrix coupled to said communications interface, wherein

said switching matrix is configured to switch during a period of time during which said relock word traverses said switching matrix.

30. **(Previously Presented)** A telecommunications system comprising:  
means for receiving a datastream, wherein said data stream comprises a first plurality of words;  
means for rearranging said data stream into a second plurality of words, wherein said second plurality of words include a relock word, and  
said relock word is configured to allow said telecommunications system to synchronize with said data stream; and  
means for determining, for each of said second plurality of words, if said each of said second plurality of words should be included in the generation of a backplane parity value by determining if said each of said second plurality of words is said relock word.

31. **(Previously Presented)** The telecommunications system of claim 30, further comprising:  
means, for said each of said second plurality of words,  
for ignoring said each of said second plurality of words, if said each of said second plurality of words is said relock word, and  
for including said each of said second plurality of words in said parity calculation, otherwise.

32. **(Previously Presented)** The telecommunications system of claim 31, wherein said parity calculation comprises:  
calculating said backplane parity value by performing a bit-wise exclusive-or between said each of said second plurality of words included in said parity calculation, wherein said each of said second plurality of words included in said parity calculation is a byte.

33. **(Previously Presented)** The telecommunications system of claim 31, wherein said first plurality of words is organized as a first frame having a first frame

format and said second plurality of words is organized as a second frame having a second frame format.

34. **(Previously Presented)** The telecommunications system of claim 33, wherein said relock word is among a plurality of such relock words and said second frame includes said plurality of such relock words.

35. **(Previously Presented)** The telecommunications system of claim 31, further comprising:

switching means for switching said data stream, wherein

said switching means is coupled to said means for receiving, and

said switching means is configured to switch during a period of time

during which said relock word traverses said switching means.

36. **(Previously Presented)** A telecommunications system comprising:

a switching matrix;

a communications interface, wherein

said communications interface is coupled to said switching matrix,

said communications interface is configured to receive a data stream

comprising a plurality of words,

said plurality of words include at least one word that is designated as a

relock word,

said switching matrix is configured to be switched without causing

disruption of another data stream being communicated through

said switching matrix by switching during a period of time during

which said at least one word traverses said switching matrix; and

a parity generation circuit, coupled to said communications interface and

configured to determine, for each of said plurality of words, if said each of

said plurality of words should be used to generate a backplane parity value

by determining if said each of said plurality of words is said at least one

word



37. **(Previously Presented)** The telecommunications system of claim 36, wherein said parity generation circuit comprises:  
parity function unit, wherein said parity function unit is configured to generate a backplane parity value; and  
position detector, coupled to said parity function unit, wherein  
said position detector is configured to cause said parity function unit to include one of said words in said generation of said backplane parity value if said one of said words is not said at least one word.
38. **(Previously Presented)** The telecommunications system of claim 36, wherein  
said parity generation circuit is configured to determine if one of said words should be included in generating a backplane parity value by determining if said one of said words is said at least one word.
39. **(Previously Presented)** The telecommunications system of claim 36, wherein  
said parity generation circuit is configured to generate a backplane parity value using ones of said words that are not said at least one word.
40. **(Previously Presented)** The telecommunications system of claim 36, wherein said communications interface is further configured to:  
insert said backplane parity value into said data stream; and  
communicate said data stream through said switching matrix.
41. **(Previously Presented)** The telecommunications system of claim 36, wherein said communications interface further comprises:  
a frame assembly unit, coupled to an input and an output of said communications interface.
42. **(Previously Presented)** The telecommunications system of claim 41, wherein

said frame assembly unit is configured to allow insertion of said backplane parity value into said data stream, and  
said communications interface is configured to communicate said data stream through said switching matrix.

43. **(Previously Presented)** The telecommunications system of claim 41, further comprising:  
a parity checking circuit, wherein  
said communications interface comprises a receive section coupled to an input of said switching matrix and a transmit section coupled to an output of said switching matrix,  
said receive section comprises said parity generation circuit, and  
said transmit section comprises said parity checking circuit.

44. **(Previously Presented)** The telecommunications system of claim 37, wherein said parity checking circuit comprises:  
a parity generation unit;  
a storage unit;  
a comparison unit, coupled to said parity generation unit and said storage unit;  
and  
a parity checking control unit, coupled to said parity generation unit, said storage unit and said comparison unit.

45. **(Previously Presented)** The telecommunications system of claim 44, wherein  
said parity checking control unit is configured to cause said parity generation unit to generate a parity value,  
said parity checking control unit is configured to cause said storage unit to store said backplane parity value, and

said comparison unit is configured to compare said parity value and said backplane parity value, and to indicate an error if said parity value and said backplane parity value do not match.

46. **(Previously Presented)** A method of generating a backplane parity value comprising:

for each of a plurality of words in a data stream,  
determining if said each of said words should be included in said generation of said backplane parity value by determining if said each of said words is a relock word, wherein  
at least one of said words is designated as said relock word,  
said data stream is to be communicated through a switching matrix of a telecommunications system, and  
said at least one of said words allows said switching matrix to be switched without causing disruption of another data stream being communicated through said switching matrix.

47. **(Previously Presented)** The method of claim 46, wherein a plurality of relock words includes said relock word and said relock words are included in said words.

48. **(Previously Presented)** The method of claim 47, further comprising:  
generating said backplane parity value using those of said each of said words that are not said relock words.

49. **(Previously Presented)** The method of claim 47, further comprising:  
inserting said backplane parity value into said data stream; and  
communicating said data stream through said switching matrix.

50. **(Previously Presented)** The method of claim 49, further comprising:  
switching said switching matrix during a period of time during which said relock words traverse said switching matrix.

51. **(Previously Presented)** The method of claim 49, further comprising:  
receiving said data stream from said switching matrix;  
generating a parity value from said data stream;  
comparing said parity value to said backplane parity value; and  
generating an error signal if said comparison indicates that said parity value and  
said backplane parity value do not match.
52. **(Previously Presented)** The method of claim 46, wherein said relock  
words configured to allow said telecommunications system to synchronize with said data  
stream.
53. **(Previously Presented)** The method of claim 46, further comprising:  
rearranging said data stream into a second plurality of words, wherein  
a plurality of said second plurality of words are designated as relock  
words, and  
said relock word is among said relock words.
54. **(Previously Presented)** The method of claim 53, wherein said relock  
words are configured to allow said telecommunications system to synchronize with said  
data stream.
55. **(Previously Presented)** The method of claim 53, wherein  
said words are organized as a first frame having a first frame format,  
said second plurality of words is organized as a second frame having a second  
frame format,  
said first frame format is that of a SONET frame, and  
said second frame format is that of an Errorless Switching frame.
56. **(Previously Presented)** A computer program product for generating a  
backplane parity value, said computer program product encoded in computer readable  
media, said computer program product comprising:

a first set of instructions, executable on a computer system, configured to, for each of a plurality of words in a data stream, determine if said each of said words should be included in said generation of said backplane parity value by determining if said each of said words is a relock word, wherein at least one of said words is designated as said relock word, said data stream is to be communicated through a switching matrix of a telecommunications system, and said at least one of said words allows said switching matrix to be switched without causing disruption of another data stream being communicated through said switching matrix.

57. **(Previously Presented)** The computer program product of claim 56, wherein a plurality of relock words includes said relock word and said relock words are included in said words.

58. **(Previously Presented)** The computer program product of claim 57, further comprising:  
a second set of instructions, executable on said computer system, configured to generate said backplane parity value using those of said each of said words that are not said relock words.

59. **(Previously Presented)** The computer program product of claim 57, further comprising:  
a second set of instructions, executable on said computer system, configured to insert said backplane parity value into said data stream; and  
a third set of instructions, executable on said computer system, configured to communicate said data stream through said switching matrix.

60. **(Previously Presented)** The computer program product of claim 59, further comprising:

a fourth set of instructions, executable on said computer system, configured to switch said switching matrix during a period of time during which said relock words traverse said switching matrix.

61. **(Previously Presented)** The computer program product of claim 59, further comprising:

- a fourth set of instructions, executable on said computer system, configured to receive said data stream from said switching matrix;
- a fifth set of instructions, executable on said computer system, configured to generate a parity value from said data stream;
- a sixth set of instructions, executable on said computer system, configured to compare said parity value to said backplane parity value; and
- a seventh set of instructions, executable on said computer system, configured to generate an error signal if said comparison indicates that said parity value and said backplane parity value do not match.

62. **(Previously Presented)** The computer program product of claim 56, wherein said relock words configured to allow said telecommunications system to synchronize with said data stream.

63. **(Previously Presented)** The computer program product of claim 56, further comprising:

- a fourth set of instructions, executable on said computer system, configured to rearrange said data stream into a second plurality of words, wherein a plurality of said second plurality of words are designated as relock words, and
- said relock word is among said relock words.

64. **(Previously Presented)** The computer program product of claim 63, wherein said relock words are configured to allow said telecommunications system to synchronize with said data stream.

65. **(Previously Presented)** The computer program product of claim 63, wherein

said words are organized as a first frame having a first frame format,  
said second plurality of words is organized as a second frame having a second  
frame format,  
said first frame format is that of a SONET frame, and  
said second frame format is that of an Errorless Switching frame.

66. **(Previously Presented)** A telecommunications system comprising:  
a processor;  
a communications interface, coupled to said processor;  
computer readable medium coupled to said processor; and  
computer code, encoded in said computer readable medium, configured to  
generate a backplane parity value by virtue of being configured to cause  
said processor to:

for each of a plurality of words in a data stream,  
determine if said each of said words should be included in said  
generation of said backplane parity value by determining if  
said each of said words is a relock word, wherein  
at least one of said words is designated as said relock word,  
said data stream is to be communicated through a switching  
matrix of a telecommunications system, and  
said at least one of said words allows said switching matrix  
to be switched without causing disruption of  
another data stream being communicated through  
said switching matrix.

67. **(Previously Presented)** The telecommunications system of claim 66,  
wherein a plurality of relock words includes said relock word and said relock words are  
included in said words.

68. **(Previously Presented)** The telecommunications system of claim 67, said computer code further configured to cause said processor to:

generate said backplane parity value using those of said each of said words that are not said relock words.

69. **(Previously Presented)** The telecommunications system of claim 67, said computer code further configured to cause said processor to:

insert said backplane parity value into said data stream; and  
communicate said data stream through said switching matrix.

70. **(Previously Presented)** The telecommunications system of claim 69, said computer code further configured to cause said processor to:

switch said switching matrix during a period of time during which said relock words traverse said switching matrix.

71. **(Previously Presented)** The telecommunications system of claim 69, said computer code further configured to cause said processor to:

receive said data stream from said switching matrix;  
generate a parity value from said data stream;  
compare said parity value to said backplane parity value; and  
generate an error signal if said comparison indicates that said parity value and said backplane parity value do not match.

72. **(Previously Presented)** The telecommunications system of claim 66, wherein said relock words configured to allow said telecommunications system to synchronize with said data stream.

73. **(Previously Presented)** The telecommunications system of claim 66, said computer code further configured to cause said processor to:

rearrange said data stream into a second plurality of words, wherein  
a plurality of said second plurality of words are designated as relock words, and



said relock word is among said relock words.

74. **(Previously Presented)** The telecommunications system of claim 73, wherein said relock words are configured to allow said telecommunications system to synchronize with said data stream.

75. **(Previously Presented)** The telecommunications system of claim 73, wherein

said words are organized as a first frame having a first frame format,  
said second plurality of words is organized as a second frame having a second frame format,  
said first frame format is that of a SONET frame, and  
said second frame format is that of an Errorless Switching frame.

76. **(Previously Presented)** An apparatus for generating a backplane parity value comprising:

means for determining, for each of a plurality of words in a data stream, if said each of said words should be included in said generation of said backplane parity value by determining if said each of said words is a relock word, wherein  
at least one of said words is designated as said relock word,  
said data stream is to be communicated through a switching matrix of a telecommunications system, and  
said at least one of said words allows said switching matrix to be switched without causing disruption of another data stream being communicated through said switching matrix.

77. **(Previously Presented)** The apparatus of claim 76, wherein a plurality of relock words includes said relock word and said relock words are included in said words.

78. **(Previously Presented)** The apparatus of claim 77, further comprising:

means for generating said backplane parity value using those of said each of said words that are not said relock words.

79. **(Previously Presented)** The apparatus of claim 77, further comprising:  
means for inserting said backplane parity value into said data stream; and  
means for communicating said data stream through said switching matrix.

80. **(Previously Presented)** The apparatus of claim 79, further comprising:  
means for switching said switching matrix during a period of time during which  
said relock words traverse said switching matrix.

81. **(Previously Presented)** The apparatus of claim 79, further comprising:  
means for receiving said data stream from said switching matrix;  
means for generating a parity value from said data stream;  
means for comparing said parity value to said backplane parity value; and  
means for generating an error signal if said comparison indicates that said parity  
value and said backplane parity value do not match.

82. **(Previously Presented)** The apparatus of claim 76, wherein said relock  
words configured to allow said telecommunications system to synchronize with said data  
stream.

83. **(Previously Presented)** The apparatus of claim 76, further comprising:  
means for rearranging said data stream into a second plurality of words, wherein  
a plurality of said second plurality of words are designated as relock  
words, and  
said relock word is among said relock words.

84. **(Previously Presented)** The apparatus of claim 83, wherein said relock  
words are configured to allow said telecommunications system to synchronize with said  
data stream.

85. **(Previously Presented)** The apparatus of claim 83, wherein  
said words are organized as a first frame having a first frame format,  
said second plurality of words is organized as a second frame having a second  
frame format,  
said first frame format is that of a SONET frame, and  
said second frame format is that of an Errorless Switching frame.